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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,002	08/02/2001	Martin Huonker	HOE-640	5825

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755 MAIN STREET
MONROE, CT 06468

EXAMINER

FLORES RUIZ, DELMA R

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/921,002

Applicant(s)

HUONKER ET AL.

Examiner

Delma R. Flores Ruiz

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

Fig. 1, character 34,

Fig. 5, character 72.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 29 – 56 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: There is no structural or means recited in the claim, for performing the apparatus, example laser structural,

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laser structural example; substrate, cladding, mirror(s), blocking, electrodes etc. One of ordinary skill in the art will not understand the apparatus since the components of the apparatus are not clearly stated at the claim as a complete structure.

Claims 29 – 56 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: There is no structural or means recited in the claim, for performing the apparatus, example laser amplifying, a plate-like solid state body, active medium, cooling system, first and second flat side and adhesive layer. One of ordinary skill in the art will not understand the apparatus since the components of the apparatus are not clearly stated at the claim as a complete structure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 29 – 39 and 53 – 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hironaka (5,729,561).

Regarding claims 29 – 39 and 53 – 56, Hironaka discloses a laser amplifying system comprising; a plate like solid state body (see Fig. 1(a), Character 2) having two oppositely located flat sides, a laser active medium (see Fig. 1(a), Character 4), a cooling member with a support surface arranged so as to face a first one of the flat sides of the solid-state body, said first flat side being thermally coupled to said support surface for the discharge of heat, said first flat side of the solid-state body being coupled mechanically and thermally to the support surface by an adhesive layer (see Fig. 1(a), Character 8) produced from an adhesive material. The active adhesive layer area is at least that area of the adhesive layer bordering on a volume area of the solid state body having a pumping power density of the pumping light radiation field of at least approximately 80 % of the maximum value present in it (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a the solid state body having a pumping power density of the pumping light radiation field of at least approximately 80 % of the maximum value , and therefore said limitations are said to be inherently disclosed in the teachings of Hironaka). The active adhesive layer area is at least that area of the adhesive layer bordering on the volume area of the solid state body penetrated by the pumping light radiation field and two intersecting pumping light radiation fields (see Figs 1(a) - 14 (c)).

The adhesive layer has a tensile strength of more than 1, 5, 25 N/mm² (see Figs 3, 17 and 18). The adhesive layer is essentially thermally invariant in shape in the solid, cross-linked state (see Figs 1(a) – 14 (c)). The adhesive is two components adhesive (Column 10, lines 1 – 3). The adhesive is optically transparent and has essentially constant thickness (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of the adhesive is optically transparent and has essentially constant thickness , and therefore said limitations are said to be inherently disclosed in the teachings of Hironaka). The adhesive layer has increasing thickness in a radial direction in relation to a center of the active volume area starting from a central adhesive layer are bordering on a said center and the course of the thickness of the adhesive layer is essentially radially symmetric to the center of the active volume are (see Figs. 1(a) – 14(c)).

It would have been obvious at the time of applicant's invention, because the recitation " passing essentially invariant in volume from a liquid state into a solid, cross-linked state, and the adhesive layer having an active adhesive layer area with a heat resistance of less than 5 or 10 K x mm²/W" " is considered as a process limitation in an apparatus claim. The presence of process limitations on product claims, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965). The functional recitation that "passing essentially invariant in volume from a liquid state into a solid, cross- linked

state, and the adhesive layer having an active adhesive layer area with a heat resistance of less than $5 \text{ or } 10 \text{ K} \times \text{mm}^2/\text{W}$ is insufficient to patentable distinguish the claimed apparatus from the apparatus disclosed by (SMITH), because it is narrative in form. In order to be given patentable weight, a functional recitation must be expressed as a "means" for performing the specified function, as set forth 35 U.S.C. 112, 6th paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language. In re Fuller, 1929 C.D. 172; 388 O.G. 279.

Claims 40 – 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hironaka (5,729,561) in view of De Voe et al (5,766,277) .

Regarding claims 40 – 43 Hironaka discloses the claimed invention except for the adhesive passes from the liquid state into the solid, cross-linked state without any transfer of substances, the adhesive is an adhesive hardening by way of a supply of energy by means of radiation, radiation with light and radiation with UV. It would have been obvious at the time of applicant's invention, to combine De Voe of teaching a the adhesive passes from the liquid state into the solid, cross-linked state without any transfer of substances, the adhesive is an adhesive hardening by way of a supply of energy by means of radiation, radiation with light and radiation with UV with laser because such materials, broadly called epoxides, include both monomeric and

polymeric epoxides and can be aliphatic, cycloaliphatic, or aromatic. They can be liquid or solid or blends thereof, blends being useful in providing tacky adhesive films. These materials generally have, on the average, at least two epoxy groups per molecule (preferably more than two epoxy groups per molecule). The polymeric epoxides include linear polymers having terminal epoxy groups (e.g., a diglycidyl ether of a polyoxyalkylene glycol), polymers having skeletal oxirane units (e.g., polybutadiene polyepoxide), and polymers having pendent epoxy groups (e.g., a glycidyl methacrylate polymer or copolymer). The molecular weight of the epoxy resin may vary from about 74 to about 100,000 or more. Make coat composition based on epoxy and polyester, which also contain the polyfunctional acrylates are also higher in viscosity after exposure to UV radiation. The energy source can be thermal (heat), E-beam, UV light, visible, or a combination of UV and thermal energy.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hironaka (5,729,561) in view of Okoshi et al. (5,665,473).

Regarding claim 44 Hironaka discloses the claimed invention except for the adhesive has a viscosity of less than 1000nPh x s in the non-cross linked state. It would have been obvious at the time of applicant's invention, to combine Okoshi of teaching a the adhesive has a viscosity of less than 1000nPh x s in the non-cross linked state with laser because it would have been obvious to one of ordinary skill in the art at the time

the invention was made to the adhesive has a viscosity of less than 1000nPh x s in the non-cross linked state, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 45 – 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hironaka (5,729,561) in view of Okoshi et al. (5,665,473).

Regarding claims 45 – 49, Hironaka discloses the claimed invention except for the adhesive layer is free from filler material, the filler material has nanoparticles, the filler material has filler bodies with a sizes in the micrometer range and the filler material has filler bodies consisting of one or more of the substance boron nitride, diamonds, silver copper and/or gold. It would have been obvious at the time of applicant's invention, to combine Okoshi of teaching a the adhesive layer is free from filler material, the filler material has nanoparticles, the filler material has filler bodies with a sizes in the micrometer range and the filler material has filler bodies consisting of one or more of the substance boron nitride, diamonds, silver copper and/or gold with laser because it would have been obvious to one having ordinary skill in the art at the time the invention was made to the adhesive layer is free from filler material, the filler material has nanoparticles, the filler material has filler bodies with a sizes in the micrometer range and the filler material has filler bodies consisting of one or more of the

substance boron nitride, diamonds, silver copper and/or gold, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claims 50 – 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hironaka (5,729,561) in view of Okoshi et al. (5,665,473).


Regarding claims 50 – 52 Hironaka discloses the claimed invention except for the adhesive layer bordering on the active volume area has a thickness of less than 50, 5 and 2 μm . It would have been obvious at the time of applicant's invention, to combine Tabuchi of teaching a the adhesive layer bordering on the active volume area has a thickness of less than 50, 5 and 2 μm with laser because it would have been obvious to one of ordinary skill in the art at the time the invention was made to the adhesive layer bordering on the active volume area has a thickness of less than 50 μm , 5 μm and 2 μm , since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (703) 308-6238. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.


Delma R. Flores Ruiz
Examiner
Art Unit 2828


Paul Ip
Supervisor Patent Examiner
Art Unit 2828

DRFR/PI
December 9, 2002